

**ABSTRACT OF THE DISCLOSURE**

Method and system thereof for transmission of several coherence division multiplexed (CDM) optical signals via one wavelength division multiplexed (WDM) transmission channel of  
5 a multichannel WDM telecommunication system to extend the network capacity to a theoretical limit. A broadband optical source generates light within the spectral range of at least one WDM transmission channel. Several CDM channels share this spectral range to transmit and detect phase modulated optical signals through optical fiber links.

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